Daniel Wall/SUPR/R7/USEPA/US
10/10/2008 11:17 AM

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Subject West Lake final SOWs for RD


West Lake OU2 SOW Final 10.07.08.pdf


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STATEMENT OF WORK
REMEDIAL DESIGN
WEST LAKE LANDFILL SITE
OPERABLE UNIT 2
BRIDGETON, MISSOURI

I. PURPOSE

The purpose of this Statement of Work (SOW) is to set forth the requirements for the Remedial Design (RD), and its relationship to the Remedial Action (RA) and Operation and Maintenance (O&M) for the remedy set forth in the Record of Decision (ROD), signed by the Director of the Superfund Division on July 25, 2008, for the West Lake Landfill Site, Operable Unit 2 (OU2). This SOW is incorporated into and made a part of the Third Amendment to the Administrative Settlement Agreement and Order on Consent (AOC) entered into by the Respondent and the United States Environmental Protection Agency Region VII (EPA) for the RD for OU2. The Respondent shall follow the ROD, the AOC, the final approved RD Work Plan, and the most recent revisions of appropriate EPA guidance in submitting deliverables for and implementing the RD at OU2.

A. Remedial Design (RD)

The RD process begins with the preparation of the RD Work Plan which sets forth plans and schedules for those activities to be undertaken by the Respondent and shall address the submittal of the final plans, drawings, specifications, general provisions, and special requirements necessary to implement the remedy selected in the ROD. Standard remedial design operations include project planning, field data acquisition and sample analysis, data evaluation, design support activities, preliminary design, intermediate design, pre-final/final design, value engineering (VE) during design, community relations, and project design completion. The RD Work Plan shall be prepared as set forth in Section V of this SOW and Paragraph 22(g) of the Settlement Agreement.

B. Remedial Action (RA)

Following completion of the RD phase, although not covered by this SOW, the RA process begins with preparation of the RA Work Plan (RAWP) which sets forth plans and schedules for the actual implementation of the remedy.

C. Operation and Maintenance (O&M)

O&M begins during the RA and continues after RA implementation has been completed. The RD shall make provisions for O&M activities which include: 1) inspection and maintenance; 2) long-term monitoring; 3) maintenance and enforcement of use restrictions; 4) preparation and submission of reports on monitoring, inspection and maintenance activities.

II. DESCRIPTION OF THE REMEDIAL DESIGN ACTIVITIES

The Respondent shall conduct the RD process to design the Selected Remedy identified in the OU2 ROD. The remedy will be designed to meet the performance standards, criteria and specifications set forth in the OU2 ROD, this SOW and the Settlement Agreement, unless subsequently modified in accordance with the procedures set forth in the Settlement Agreement. The performance standards, criteria and specifications shall include the substantive requirements set forth in applicable or relevant and appropriate requirements (ARARs) identified in Section 13.2 of the ROD.

A. Description of the Selected Remedy

The remedy for OU2 was developed to protect human health and the environment by providing source control for the landfilled waste materials. The source control methods prevent human receptors from contacting the waste material and control contaminant migration to air or groundwater.

1. Landfill Cap: Install landfill cover system to control and minimize the migration of contaminants from the Inactive Sanitary Landfill and prevent direct contact with landfilled wastes.
2. Groundwater Monitoring: Implement long-term groundwater monitoring program to demonstrate groundwater protection.
3. Institutional Controls: Implement land use restrictions to ensure future uses do not impact the effectiveness or the integrity of the remedy.
4. Surveillance and Maintenance: Implement periodic inspection and maintenance program for all components of the remedy.

B. Performance Standards for the Selected Remedy

The Respondent shall design the remedy to meet the performance standards and specifications set forth in the OU2 ROD and this SOW. The performance standards for the major components of the remedy are identified below. Alternative standards or requirements may be approved if it can be demonstrated that the alternative design is at least equivalent in performance.

1. Landfill Cap: The landfill cover system shall be designed to meet, at a minimum, the closure requirements for sanitary landfills. Consistent with the OU2 ROD, these requirements are identified below.

   The Missouri Department of Natural Resources (MDNR) rules for sanitary landfill caps are in 10 CSR 80-3.010(17). These rules require that the final cover shall consist of at least two feet (2') of compacted clay with a coefficient of permeability of $1X10^{-5}$ cm/sec or less and overlaid by at least one foot (1') of soil capable of sustaining vegetative growth. The minimum sloping requirement of 5% need not be

met in this case; however, the design shall include provisions for slope stability and optimize the need to promote runoff and minimize the potential for erosion.

The design will incorporate plans for decomposition gas monitoring and control consistent with 10 CSR 80-3.010(14).

2. Groundwater Monitoring: The RD shall provide for the design and implementation of a long-term groundwater monitoring program. The ground water monitoring program shall include the collection of data necessary to track the movement and direction of flow of the ground water and to monitor changes in chemical constituents and chemical concentrations in the ground water over time. The monitoring plans shall include specific monitoring objectives, monitoring locations, data quality objectives, sampling frequencies and procedures, and analytical parameters and methods. The plans shall describe the approach to data evaluation and trend analysis. The monitoring program will be designed to meet the objectives in OU2 ROD Section 12.2.1 and will be consistent with the monitoring requirements and groundwater protection standards found in the Missouri Solid Waste Rules for Sanitary Landfills [10 CSR 80-3.010 (11)].

3. Institutional Controls: The RD shall provide for the design and implementation of institutional controls meeting the land and resource use requirements and objectives identified in the OU2 ROD Section 12.2.2.

4. Surveillance and Maintenance: The RD shall provide for surveillance and maintenance of the remedy. Plans shall be developed describing the procedures for inspection and maintenance of all engineering controls, access controls and monitoring structures. Plans shall also address procedures for maintenance, inspection and enforcement of land and groundwater use restrictions.

III. PROJECT PLANNING AND SUPPORT

A. Project Planning/Management

1. Designation of Project Coordinator: Respondent has identified its Project Coordinator as Ward Herst and Alternate Project Coordinator as Victoria Warren pursuant to Paragraph 50, Section XVI (Project Coordinators) of the Settlement Agreement.
2. Review and Approval of Supervising Contractor: Respondent shall propose a Supervising Contractor within 30 days of the effective date of the amended Settlement Agreement pursuant to Paragraph 21, Section VIII (Work to be Performed).

IV. DATA ACQUISITION ACTIVITIES

A. Data Collection

For all sampling activities conducted in preparation for or in support of the RD, Respondent shall prepare a sampling and analysis plan. At a minimum, the plan shall describe the purpose, the data quality objectives, and the procedures for collection and evaluation of the analytical data.

B. Analytical Quality Assurance

1. Sample Analysis: The Respondent shall ensure that analytical tests are performed in accordance with the EPA-approved Quality Assurance Project Plan (QAPP). EPA standard operating procedures (SOPs) may be incorporated by reference.
2. Analytical Support and Data Validation: The Respondent shall arrange for the validation of environmental sampling results to ensure the data are accurate and defensible. Sample management and data validation activities shall be performed in accordance with the EPA-approved QAPP.
3. Data Evaluation: The Respondent shall organize and evaluate data for submittal in the form of a Data Evaluation Summary Report. Specifically, data evaluation efforts shall include:
    - Data usability evaluation and Field QA/QC
    - Data reduction, tabulation and evaluation
    - Data Evaluation Summary Report submitted to EPA for review and approval

V. REMEDIAL DESIGN TASKS

In accordance with Paragraph 22(g) of the Third Amendment to the Settlement Agreement, the Respondent shall submit to EPA the design deliverables described below.

A. Remedial Design Work Plan

The Respondent shall submit a draft Remedial Design Work Plan (RD Work Plan) for the remedy set forth in the OU2 ROD within 60 days of the effective date of the Third Amendment of the Settlement Agreement. The RD Work Plan shall describe the approach and the schedules for implementation of the RD and any field activities necessary to support the RD. Elements addressed by the RD Work Plan include the following:

1. Composition of the design team.
2. Health and Safety Plan (HSP): Respondent shall develop the site-specific HSP that specifies employee training, protective equipment, standard operating procedures, and contingency planning in accordance with 40 CFR § 300.150 of the NCP and 29 CFR § 1910.120. This plan need not be submitted to EPA for review and approval but should be made available to EPA upon request.

3. Description of additional studies that will be conducted during the design phase to supplement available data or support design activities, including development of the SAP/QAPP, as necessary.
4. Identification of all the substantive requirements for the ARARs identified in Section 13.2 of the ROD. All required permits for other activities associated with implementation of the remedy shall also be identified.
5. Conceptual design and the design basis for the components of the remedy.
6. Progress reporting.
7. Proposed schedule of design phase activities consistent with the schedule in Section VI of this SOW.

B. Design Reviews

Upon receipt of EPA approval of the RD Work Plan, the Respondent shall implement design activities for the remedy in accordance with the Schedule in Section VI of this SOW and in the approved RD Work Plan.

1. Preliminary Design Report: The preliminary design submittal corresponds to approximately 30% design completion and shall include the following:

    a. Design criteria – this shall document the design basis for the elements of the remedy and verify that the performance standards in the ROD are met, including compliance with ARARs and best professional engineering practices.
    b. Results of additional study – this shall interpret the results of design studies and identify any additional studies necessary to support design.
    c. Project delivery plans – this shall present the strategy for timely product delivery and shall focus on the management necessary to carry out the design and implement the remedy. The plans should address such things as phasing construction, health and safety considerations, review requirements, and contractor and equipment availability.
    d. Preliminary plans, drawings and sketches.
    e. Outline of required specifications.
    f. Preliminary implementation schedule.

2. Intermediate Design Report: The intermediate design submittal corresponds to approximately 60% complete and consists of the continuation and expansion of the preliminary design. This submittal should include the preliminary O&M plan and preliminary plans for the long-term groundwater monitoring program that includes information such as well locations and construction details. Any value engineering proposals should be identified and evaluated at this review. Based on review of the Preliminary Design Report, EPA may determine that the Intermediate Design Report is

not necessary and this submittal shall be limited to the draft O&M Plan and the Groundwater Monitoring Plan.

3. Pre-Final/Final Design Report: The pre-final submittal is what the Respondent considers the final design pending EPA review and comment. Upon resolution of comments and EPA approval consistent with the Settlement Agreement, this submittal becomes the final design. The final design submittal shall include the following:
    a. Final design analysis detailing design compliance with performance standards and addressing all issues and comments as resolved during the design process. This analysis shall clearly address any modification of the designs as resolved during the preliminary, intermediate and pre-final design submittal review.
    b. Final plans, construction drawings and specifications.
    c. Construction schedules.
    d. O&M Plan – The O&M requirements for the landfill cover system and all engineering components of the remedy shall include: 1) schedules and requirements for performing routine maintenance activities; 2) schedules and criteria for performing periodic and follow-up inspections; 3) provisions for performing unplanned maintenance and repair; 4) provisions for a data management system that will accommodate field logs, inspection reports, document control and inventory procedures; 5) provisions for the 5-Year Reviews; 6) contact lists; 7) reporting requirements; 8) procedures for updating or modifying the O&M Plan, and; 9) procedures for community involvement.

        The O&M requirements for the groundwater monitoring component shall include: 1) schedules and requirements for performing long-term monitoring; 2) a data management system that will accommodate field logs, sample tracking, quality assurance and analytical data, and; 3) methods for data evaluation and interpretation.

        The O&M requirements for the institutional controls (ICs) component shall include: 1) provisions for maintaining, reporting on and enforcing the ICs; 2) provisions to verify that land and resource uses are consistent with the requirements in Section 12.2.2 of the OU2 ROD; 3) provisions to respond to activities that are inconsistent with the use restrictions or the effectiveness of the ICs; 4) provisions to notify EPA and MDNR of any proposed or actual changes in land or resource use on property subject to these restrictions, and; 5) provisions to notify EPA and MDNR of any planned or actual transfer, sale, or lease of property subject to these restrictions.

    e. Field Sampling Plan(s) - This plan shall define in detail the purpose, the data quality objectives, data gathering methods, sampling equipment, sample types locations, frequencies, analytes, sample handling and documentation. This plan is developed in conjunction with an EPA-approved QAPP.

f. Construction Quality Assurance Plan (CQAP) – This plan shall describe the components of the construction quality assurance program which will ensure that the completed project meets or exceeds all design criteria, plans and specifications. The CQAP shall address the following elements:

- Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the remedy.
- Qualifications of the Quality Assurance Official demonstrating the training and experience necessary to fulfill the identified responsibilities.
- Testing and sampling protocols used to monitor construction.
- Identification of sampling activities such as sample size, sample locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, and evaluation and acceptance reports.

g. Contingency Plan – This shall be written for the local affected population in the event of accident or emergency at the Site. Respondent shall incorporate into the Contingency Plan an Air Monitoring Plan and a Spill Prevention, Control and Countermeasures Plan, as applicable.

h. Community Relations Plan – These provisions shall support EPA in providing appropriate updates and information to the affected community and other stakeholders or interested parties.

VI. SCHEDULE FOR REMEDIAL DESIGN

SUBMITTAL	DUE DATE
Draft RD Work Plan	Within 60 days of the effective date of the amended Settlement
Final RD Work Plan	Within 30 days of receipt of EPA's comments on Draft RD Work Plan
Draft SAP/QAPP	As part of the Draft RD Work Plan Submittal and/or as provided for in the RD Work Plan
Preliminary Design Report	Within 60 days of approval of the RD Work Plan or completion of data evaluation summary report (whichever is later)
Intermediate Design Report (if necessary)	Within 60 days after receipt of EPA's comments on the Preliminary Design
Pre-Final Design Report	Within 60 days after receipt of EPA's comments on the Intermediate Design
Final Design Report	Within 30 days after receipt of EPA's comments on the Pre-Final Design
Progress Reports during RD	Monthly by the tenth day of each month beginning in the first month following the effective date of the amended Settlement Agreement

VII. REFERENCE DOCUMENTS

"EPA Superfund Remedial Design and Remedial Action Guidance", Interim Final, US EPA, Office of Solid Waste and Emergency Response, OSWER Directive 9355.0-4A, June, 1986.

"EPA Oversight of Remedial Designs and Remedial Actions Performed by PRP", Office of Emergency and Remedial Response, EPA Publication No. 9355.5-01FS, February 1990.

"Scoping the Remedial Design", Draft, US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9355.0-43, EPA/540/F-93/026, May, 1993.

"The Remedial Action Report - Documentation for Operable Unit Completion", US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9355.0-39FS, June, 1992.

“Comprehensive Five-Year Review Guidance”, OSWER Directive 9355.7-03B-P, dated June 2001.

“Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites” February 12, 1998. OSWER Directive 9200.4-25, NTIS Order Number (PB97 963308), 6p.

“Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), EPA 402-R-97-016, December 1997.

"Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors", American Society of Civil Engineers, 1990.

"Data Quality Objectives Process for Superfund", Interim Final Guidance, US EPA, Office of Solid Waste and Emergency Response, OSWER Publication No. 9355.9-01, EPA/540/R-93/071, September, 1993.

"Guidance for the Preparation of Standard Operating Procedures", EPA, QA/G-6.

"Data Quality Assessment: A Reviewers Guide", EPA, QA/G-9R.

“Data Quality Assessment: Statistical Tools for Practitioners”, EPA, QA/G-9s.

"EPA Requirements for Quality Assurance Project Plans”, EPA, QA/R-5.

"EPA Guidance for Quality Assurance Project Plans", EPA, QA/G-5.

“EPA Requirements for Quality Management Plans, EPA, QA/R-2.

“Specification and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs”, ANSI/ASQ E4-2004.

“USEPAContract Laboratory Program, Statement of Work Inorganic Analysis, ILM05.3.

“USEPAContract Laboratory Program, Statement of Work Organic Analysis, SOM01.2.

"A Compendium of Superfund Field Operations Methods," Two Volumes, US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.0-14, EPA/540/P-87/001, August, 1987.

"Community Relations In Superfund: A Handbook", US EPA, Office of Emergency and Remedial Response, EPA/540/R-92/009, January, 1992

"Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities", Interim Final Guidance, (OSW: 530-SW-89-026).

STATEMENT OF WORK
REMEDIAL DESIGN
WEST LAKE LANDFILL SITE
OPERABLE UNIT 1
BRIDGETON, MISSOURI

I. PURPOSE

The purpose of this Statement of Work (SOW) is to describe the implementation of the Remedial Design (RD), and its relationship to the Remedial Action (RA) and Operation and Maintenance (O&M) for the remedy set forth in the Record of Decision (ROD), signed by the Regional Administrator on May 29, 2008, for the West Lake Landfill Site, Operable Unit 1 (OU1). This SOW is incorporated into and made a part of the Second Amendment to the Administrative Settlement Agreement and Order on Consent (AOC) entered into by the Respondents, the Federal Respondent and the United States Environmental Protection Agency Region VII (EPA) for the RD for OU1. The Respondents shall follow the ROD, the AOC, the final approved RD Work Plan, and the most recent revisions of appropriate EPA guidance in submitting deliverables for and implementing the RD at OU1.

A. Remedial Design (RD)

The RD process begins with the preparation of the RD Work Plan which sets forth plans and schedules for those activities to be undertaken by the Respondents and shall address the submittal of the final plans, drawings, specifications, general provisions, and special requirements necessary to implement the remedy selected in the ROD. Standard remedial design operations include project planning, field data acquisition and sample analysis, data evaluation, design support activities, preliminary design, intermediate design, pre-final/final design, value engineering (VE) during design, community relations, and project design completion. The RD Work Plan shall be prepared as set forth in Section V of this SOW and Paragraph 39.h. of the AOC.

B. Remedial Action (RA)

Following completion of the RD phase, although not covered in this SOW, the RA process begins with preparation of the RA Work Plan which sets forth plans and schedules for the actual implementation of the remedy. This information is provided to ensure that the RD makes provisions for the succeeding steps. RA shall include: 1) construction of the landfill cover system; 2) excavation of radiologically contaminated soil from the Buffer Zone/Crossroads Property as necessary based on the results of additional sampling to be performed during the Remedial Design and consolidation of the excavated soil within the landfill source area; 3) installation of ground water monitoring wells, and; 4) implementation of institutional controls.

C. Operation and Maintenance (O&M)

O&M begins during the RA and continues after RA implementation has been completed. The RD shall make provisions for O&M activities which include: 1) inspection and maintenance of

the landfill cover and other remedy components; 2) ground water monitoring; 3) maintenance and enforcement of use restrictions; 4) preparation and submission of reports on monitoring, inspection and maintenance activities.

II. DESCRIPTION OF THE REMEDIAL DESIGN ACTIVITIES

The Respondents shall conduct the RD process to design the Selected Remedy identified in the OU1 ROD. The remedy will be designed to meet the performance standards, criteria and specifications set forth in the OU1 ROD, this SOW and the AOC, unless subsequently modified in accordance with the procedures set forth in the AOC. The performance standards, criteria and specifications shall include the substantive requirements set forth in applicable or relevant and appropriate requirements (ARARs) identified in Section 13.2 of the ROD.

A. Description of the Selected Remedy

The remedy for OU1 was developed to protect human health and the environment by providing source control for the landfilled waste materials. The source control methods prevent human receptors from contacting the waste material and control contaminant migration to air or groundwater.

1. Landfill Cap: Install landfill cover system to control and minimize the migration of contaminants from the OU1 source areas and prevent direct contact with landfilled wastes.
2. Buffer Zone/Crossroad Property: Consolidate radiologically contaminated soil within the area of source control prior to installation of the cap.
3. Groundwater Monitoring: Implement long-term groundwater monitoring program to demonstrate groundwater protection.
4. Institutional Controls: Implement land use restrictions to ensure future uses do not impact the effectiveness or the integrity of the remedy.
5. Surveillance and Maintenance: Implement periodic inspection and maintenance program for all components of the remedy.

B. Performance Standards for the Selected Remedy

The Respondents shall design the remedy to meet the performance standards and specifications set forth in the OU1 ROD and this SOW. The performance standards for the major components of the remedy are identified below. Alternative standards or requirements may be approved if it can be demonstrated that the alternative design is at least equivalent in performance.

1. Landfill Cap: The landfill cover system shall be designed to meet, at a minimum, the closure requirements for sanitary landfills. The cover will include enhancements consistent with the identified standards for uranium mill tailing sites. Consistent with the OU1 ROD, these requirements are identified below.

   The Missouri Department of Natural Resources (MDNR) rules for sanitary landfill caps are in 10 CSR 80-3.010(17). These rules require that the final cover shall consist of at least two feet (2') of compacted clay with a coefficient of permeability of $1X10^{-5}$ cm/sec or less and overlaid by at least on foot (1') of soil capable of sustaining vegetative growth. The minimum sloping requirement of 5% need not be met in this case; however, the design shall include provisions for slope stability and optimize the need to promote runoff and minimize the potential for erosion. The maximum sloping requirement of 25% will be met.

   The design will incorporate plans for decomposition gas monitoring and control consistent with 10 CSR 80-3.010(14).

   The Environmental Protection Standards for Uranium and thorium Mill Tailings are found in 40 CFR 192 Subpart B. The cap design will incorporate features intended to meet the relevant and appropriate protection standards as described in the OU1 ROD Section 13.2. To address the longevity requirements, the cover design will incorporate a rock or concrete rubble layer to restrict erosion and biointrusion into the underlying landfill materials. The cover system will be designed to meet the radon-222 emission standards taking into account the increased radon generation due to ingrowth of radium-226 over the design life of the cap. The cover will be of sufficient thickness or composition to shield users of the site from any increased external gamma radiation.

2. Buffer Zone/Crossroad Property: Any radiologically contaminated soil on this property will be consolidated in the area of containment (Areas 1 or 2) prior to placement of fill material or construction of the cover. The current extent of contamination is uncertain. The RD shall include field investigation to document conditions and support excavation design as necessary to meet the remediation goals. The remediation goals will be designed to meet the soil standards found in the Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (40 CFR 192 Subpart B) consistent with EPA guidance in *Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites* (OSWER Directive 9200.4-25, February 12, 1998). Investigation and verification will be done consistent with statistical methods in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), EPA 402-R-97-016.

3. Groundwater Monitoring: The RD shall provide for the design and implementation of a long-term groundwater monitoring program. The ground water monitoring program shall include the collection of data necessary to track the movement and

direction of flow of the ground water and to monitor changes in chemical constituents and chemical concentrations in the ground water over time. The monitoring plans shall include specific monitoring objectives, monitoring locations, data quality objectives, sampling frequencies and procedures, and analytical parameters and methods. The plans shall describe the approach to data evaluation and trend analysis. The monitoring program will be designed to meet the objectives in OU1 ROD Section 12.2.1 and will be consistent with the monitoring requirements and groundwater protection standards found in the Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (40 CFR 192 Subparts A and B) and the Missouri Solid Waste Rules for Sanitary Landfills [10 CSR 80-3.010 (11)]

4. Institutional Controls: The RD shall provide for the design and implementation of institutional controls meeting the land and resource use requirements and objectives identified in the OU1 ROD Section 12.2.2.

5. Surveillance and Maintenance: The RD shall provide for surveillance and maintenance of the remedy. Plans shall be developed describing the procedures for inspection and maintenance of all engineering controls, access controls and monitoring structures. Plans shall also address procedures for maintenance, inspection and enforcement of land and groundwater use restrictions.

III. PROJECT PLANNING AND SUPPORT

A. Project Planning/Management

1. Designation of Project Coordinator: Respondents have identified their Project Coordinator as Paul Rosasco and Alternate Project Coordinator as Bob Jelinek pursuant to Paragraph 67, Section XVI (Project Coordinators) of the AOC.

2. Review and Approval of Supervising Contractor: Respondents shall propose a Supervising Contractor within 30 days of the effective date of the amended AOC pursuant to Paragraph 38, Section VIII (Work to be Performed).

IV. DATA ACQUISITION ACTIVITIES

A. Data Collection

For all sampling activities conducted in preparation for or in support of the RD, Respondents shall prepare a sampling and analysis plan. At a minimum, the plan shall describe the purpose, the data quality objectives, and the procedures for collection and evaluation of the analytical data.

B. Analytical Quality Assurance

1. Sample Analysis: The Respondents shall ensure that analytical tests are performed in accordance with the EPA-approved Quality Assurance Project Plan (QAPP). EPA

standard operating procedures (SOPs) may be incorporated by reference.

2. Analytical Support and Data Validation: The Respondents shall arrange for the validation of environmental sampling results to ensure the data are accurate and defensible. Sample management and data validation activities shall be performed in accordance with the EPA-approved QAPP.
3. Data Evaluation: The Respondents shall organize and evaluate data for submittal in the form of a Data Evaluation Summary Report. Specifically, data evaluation efforts shall include:
    - Data usability evaluation and Field QA/QC
    - Data reduction, tabulation and evaluation
    - Data Evaluation Summary Report submitted to EPA for review and approval

V. REMEDIAL DESIGN TASKS

In accordance with Paragraph 39.h of the second amendment to the AOC, the Respondents shall submit to EPA the design deliverables described below.

A. Remedial Design Work Plan

The Respondents shall submit a draft Remedial Design Work Plan (RD Work Plan) for the remedy set forth in the OU1 ROD within 60 days of the effective date of the second amended AOC. The RD Work Plan shall describe the approach and the schedules for implementation of the RD and any field activities necessary to support the RD. Elements addressed by the RD Work Plan include the following:

1. Composition of the design team.
2. Health and Safety Plan (HSP): Respondents shall develop the site-specific HSP that specifies employee training, protective equipment, standard operating procedures, and contingency planning in accordance with 40 CFR § 300.150 of the NCP and 29 CFR § 1910.120 1(1) and (1)(2). This plan need not be submitted to EPA for review and approval but should be made available to EPA upon request.
3. Description of additional studies that will be conducted during the design phase to supplement available data or support design activities, including development of the SAP/QAPP, as necessary.
4. Identification of all the substantive requirements for the ARARs identified in Section 13.2 of the ROD. All required permits for other activities associated with implementation of the remedy shall also be identified.
5. Conceptual design and the design basis for the components of the remedy.

6. Progress reporting.
7. Proposed schedule of design phase activities consistent with the schedule in Section VI of this SOW.

B. Design Reviews

Upon receipt of EPA approval of the RD Work Plan, the Respondents shall implement design activities for the remedy in accordance with the Schedule in Section VI of this SOW and in the approved RD Work Plan.

1. Preliminary Design Report: The preliminary design submittal corresponds to approximately 30% design completion and shall include the following:

    a. Design criteria – this shall document the design basis for the elements of the remedy and verify that the performance standards in the ROD are met, including compliance with ARARs and best professional engineering practices.

    b. Results of additional study – this shall interpret the results of design studies and identify any additional studies necessary to support design.

    c. Project delivery plans – this shall present the strategy for timely product delivery and shall focus on the management necessary to carry out the design and implement the remedy. The plans should address such things as phasing construction, health and safety considerations, review requirements, and contractor and equipment availability.

    d. Preliminary plans, drawings and sketches.

    e. Outline of required specifications.

    f. Preliminary implementation schedule.

2. Intermediate Design Report: The intermediate design submittal corresponds to approximately 60% complete and consists of the continuation and expansion of the preliminary design. This submittal should include the preliminary O&M plan and preliminary plans for the long-term groundwater monitoring program that includes information such as well locations and construction details. Any value engineering proposals should be identified and evaluated at this review. Depending upon EPA comments on the Preliminary Design Submittal, the Intermediate Design Report may not be necessary. If EPA determines that the Intermediate Design Report is not necessary, Respondents will submit a draft of the Groundwater Monitoring Plan and a preliminary draft of the O&M Plan instead of the Intermediate Design Report.

3. Pre-Final/Final Design Report: The pre-final submittal is what the Respondents consider the final design pending EPA review and comment. Upon resolution of

comments and EPA approval consistent with the AOC, this submittal becomes the final design. The final design submittal shall include the following:

a. Final design analysis detailing design compliance with performance standards and addressing all issues and comments as resolved during the design process. This analysis shall clearly address any modification of the designs as resolved during the preliminary, intermediate and pre-final design submittal review.

b. Final plans, construction drawings and specifications.

c. Construction schedules.

d. O&M Plan – The O&M requirements for the landfill cover system and all engineering components of the remedy shall include: 1) schedules and requirements for performing routine maintenance activities; 2) schedules and criteria for performing periodic and follow-up inspections; 3) provisions for performing unplanned maintenance and repair; 4) provisions for a data management system that will accommodate field logs, inspection reports, document control and inventory procedures; 5) provisions for the 5-Year Reviews; 6) contact lists; 7) reporting requirements; 8) procedures for updating or modifying the O&M Plan, and; 9) procedures for community involvement.

   The O&M requirements for the groundwater monitoring component shall include: 1) schedules and requirements for performing long-term monitoring; 2) a data management system that will accommodate field logs, sample tracking, quality assurance and analytical data, and; 3) methods for data evaluation and interpretation.

   The O&M requirements for the institutional controls (ICs) component shall include: 1) provisions for maintaining, reporting on and enforcing the ICs; 2) provisions to verify that land and resource uses are consistent with the requirements in Section 12.2.2 of the OU1 ROD; 3) provisions to respond to activities that are inconsistent with the use restrictions or the effectiveness of the ICs; 4) provisions to notify EPA and MDNR of any proposed or actual changes in land or resource use on property subject to these restrictions, and; 5) provisions to notify EPA and MDNR of any planned or actual transfer, sale, or lease of property subject to these restrictions.

e. Field Sampling Plan(s) - This plan shall define in detail the purpose, the data quality objectives, data gathering methods, sampling equipment, sample types locations, frequencies, analytes, sample handling and documentation. This plan is developed in conjunction with an EPA-approved QAPP.

f. Construction Quality Assurance Plan (CQAP) – This plan shall describe the components of the construction quality assurance program which will ensure that the completed project meets or exceeds all design criteria, plans and specifications. The CQAP shall address the following elements:

- Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the remedy.
- Qualifications of the Quality Assurance Official demonstrating the training and experience necessary to fulfill the identified responsibilities.
- Testing and sampling protocols used to monitor construction.
- Identification of sampling activities such as sample size, sample locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, and evaluation and acceptance reports.

g. Contingency Plan – This shall be written for the local affected population in the event of accident or emergency at the Site. Respondents shall incorporate into the Contingency Plan an Air Monitoring Plan and a Spill Prevention, Control and Countermeasures Plan, as applicable.

h. Community Relations Plan – These provisions shall support EPA in providing appropriate updates and information to the affected community and other stakeholders or interested parties.

VI. SCHEDULE FOR REMEDIAL DESIGN

SUBMITTAL	DUE DATE
Draft RD Work Plan	Within 60 days of the effective date of the amended AOC
Final RD Work Plan	Within 30 days of receipt of EPA's comments on Draft RD Work Plan
Draft SAP/QAPP	As part of the Draft RD Work Plan Submittal and/or as provided for in the RD Work Plan
Preliminary Design Report	Within 60 days of approval of the RD Work Plan or completion of Data Evaluation Summary Report (whichever is later)
Intermediate Design Report (if necessary)	Within 60 days after receipt of EPA's comments on the Preliminary Design
Pre-Final Design Report	Within 60 days after receipt Of EPA's comments on the Intermediate Design
Final Design Report	Within 30 days after receipt Of EPA's comments on the Pre-Final Design
Progress Reports during RD	Monthly by the tenth day of each month beginning in the first month following the effective date of the amended AOC

VII. REFERENCE DOCUMENTS

"EPA Superfund Remedial Design and Remedial Action Guidance", Interim Final, US EPA, Office of Solid Waste and Emergency Response, OSWER Directive 9355.0-4A, June, 1986.

"EPA Oversight of Remedial Designs and Remedial Actions Performed by PRP", Office of Emergency and Remedial Response, EPA Publication No. 9355.5-01FS, February 1990.

"Scoping the Remedial Design", Draft, US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9355.0-43, EPA/540/F-93/026, May, 1993.

"The Remedial Action Report - Documentation for Operable Unit Completion", US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9355.0-39FS, June, 1992.

“Comprehensive Five-Year Review Guidance”, OSWER Directive 9355.7-03B-P, dated June 2001.

“Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites” February 12, 1998. OSWER Directive 9200.4-25, NTIS Order Number (PB97 963308), 6p.

“Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), EPA 402-R-97-016, December 1997.

"Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors", American Society of Civil Engineers, 1990.

"Data Quality Objectives Process for Superfund", Interim Final Guidance, US EPA, Office of Solid Waste and Emergency Response, OSWER Publication No. 9355.9-01, EPA/540/R-93/071, September, 1993.

"Guidance for the Preparation of Standard Operating Procedures", EPA, QA/G-6.

"Data Quality Assessment: A Reviewers Guide", EPA, QA/G-9R.

“Data Quality Assessment: Statistical Tools for Practitioners”, EPA, QA/G-9s.

"EPA Requirements for Quality Assurance Project Plans”, EPA, QA/R-5.

"EPA Guidance for Quality Assurance Project Plans", EPA, QA/G-5.

“EPA Requirements for Quality Management Plans, EPA, QA/R-2.

“Specification and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs”, ANSI/ASQ E4-2004.

“USEPAContract Laboratory Program, Statement of Work Inorganic Analysis, ILM05.3.

“USEPAContract Laboratory Program, Statement of Work Organic Analysis, SOM01.2.

"A Compendium of Superfund Field Operations Methods," Two Volumes, US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.0-14, EPA/540/P-87/001, August, 1987.

"Community Relations In Superfund: A Handbook", US EPA, Office of Emergency and Remedial Response, EPA/540/R-92/009, January, 1992

"Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities", Interim Final Guidance, (OSW: 530-SW-89-026).